Industrial Area
Sampling and Analysis Plan
Addendum #IA-04-07
IHSS Group 700-10, PAC 700-1101
(Laundry Tank Overflow–Building 732)

January 2004

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Approval received from the Colorado Department of Public Health and Environment
January 9, 2004.
Approval letter is contained in the Administrative Record.

January 2004

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ACRONYMS

DOE	U. S. Department of Energy
ER	Environmental Restoration
ER RSOP	Environmental Restoration RFCA Standard Operating Protocol
FY	Fiscal Year
HRR	Historic Release Report
IA	Industrial Area
IASAP	Industrial Area Sampling and Analysis Plan
IHSS	Individual Hazardous Substance Site
PAC	Potential Area of Concern
PCOC	Potential Contaminant of Concern
RFCA	Rocky Flats Cleanup Agreement
RSOP	RFCA Standard Operating Protocol
SAP	Sampling and Analysis Plan
VOC	Volatile Organic Compound
UBC	Under Building Contamination

1.0 INTRODUCTION

This Industrial Area (IA) Sampling and Analysis Plan (SAP) (IASAP) Addendum #IA-04-07 includes Individual Hazardous Substance Site (IHSS) Group-specific information, sampling locations, and potential contaminants of concern (PCOCs) for IHSS Group 700-10, which is proposed for characterization during Fiscal Year (FY) 04. This IASAP Addendum is a supplement to the IASAP (DOE 2001) and includes data and proposed sampling locations for Potential Area of Concern (PAC) 700-1101. This is the only IHSS, PAC, or Under Building Contamination (UBC) site in IHSS Group 700-10. The location of IHSS Group 700-10 is shown on Figure 1.

2.0 EXISTING IHSS, PAC, AND UBC INFORMATION

Existing information for the IHSS Group is available in Appendix C of the IASAP (DOE 2001), the Industrial Area Data Summary Report (DOE 2000), the Historical Release Reports (HRR) for the Rocky Flats Plant (DOE 1992-2003), and Environmental Restoration (ER) Rocky Flats Cleanup Agreement (RFCA) Standard Operating Protocol (RSOP) (ER RSOP) Notification #04-07 (DOE 2003b). Process knowledge indicates that PAC 700-1101 may contain radionuclide contamination in the subsurface soil. Surface soil contamination is not suspected. There are no existing soil data within the limits of IHSS Group 700-10.

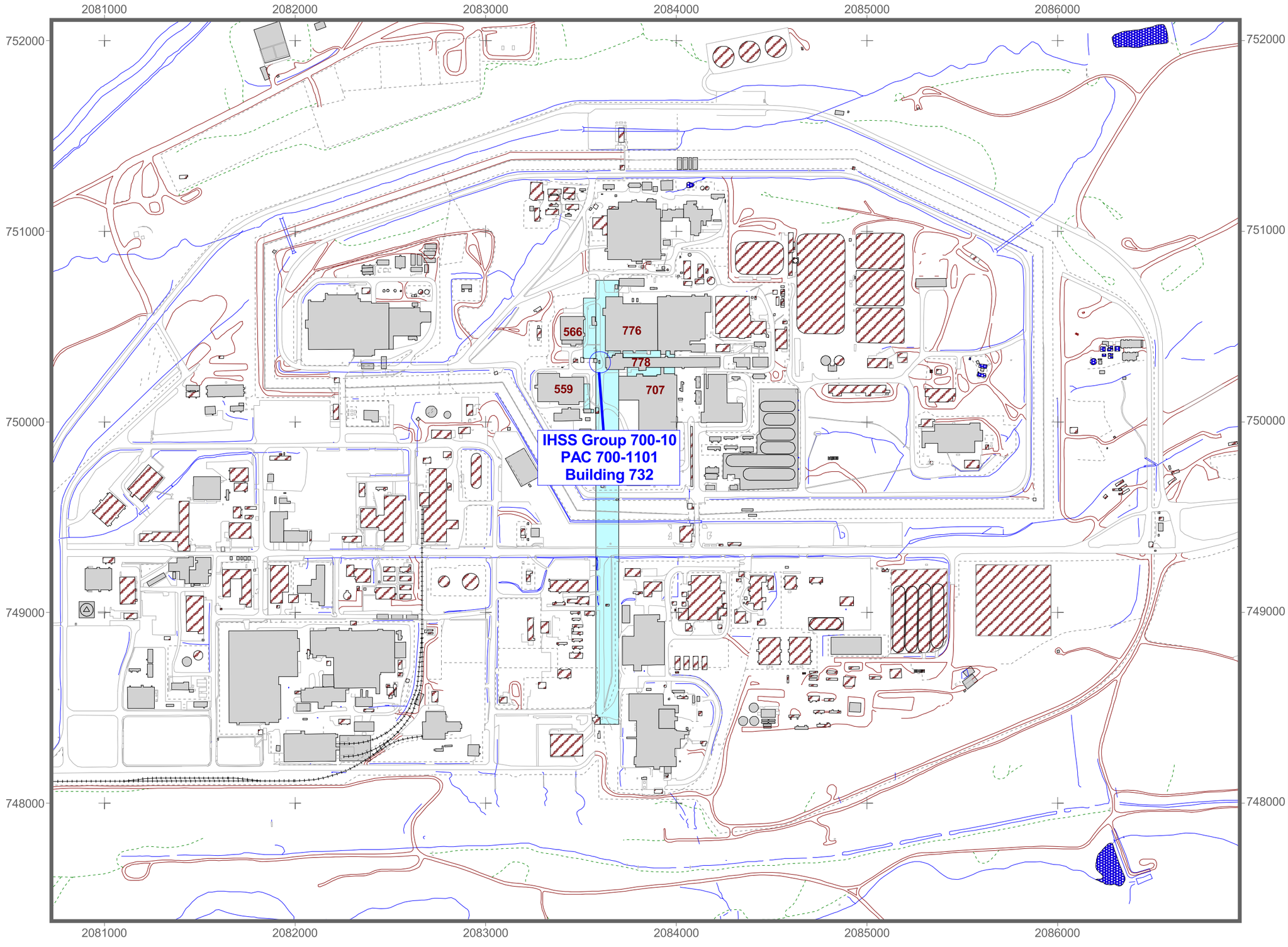
Radionuclides are the only Potential Contaminants of Concern (PCOCs) at PAC 700-1101. The PCOCs at PAC 700-1101 were determined based on process knowledge (DOE 1992-2003, 2003a). Low-level radioactive laundry and floor drain (non-process line) water was the only potentially contaminating media handled within PAC 700-1101. Laundry and floor drain water overflowed a tank within the underground part of PAC 700-1101. Table 1 presents PCOCs for IHSS Group 700-10.

Table 1
Potential Contaminants of Concern

IHSS Group	IHSS/PAC/UBC Site	PCOCs	Media	Sources	Sampling Type
700-10	PAC 700-1101	Radionuclides	Subsurface Soil	HRR (DOE 1992-2003) and Process knowledge (DOE 2003a)	Biased

Figure 1

IHSS Group 700-10
PAC 700-1101
General Location



KEY

- IHSSs surrounding PAC 700-1101
- Demolished building
- Standing building
- Pond
- Paved road
- Dirt road
- Trail
- Fence
- Railroad
- Streams or surface drainage

N W E S

200 0 200 400 600 800 Feet

Scale = 1:6000

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared for: KAISER•HILL COMPANY

Prepared by: RADMS

Date: 10/27/03
File:W://Projects/Fy2004/700-10/IHSS Group 700-10.apr

Soil samples will also be collected for volatile organic compound (VOC) analyses at all locations. VOC samples are being collected because of VOC groundwater in the IA. VOCs are not thought to be PCOCs for IHSS Group 700-10. This investigation provides an opportunity to maximize the efficiency of sample collection for two projects. VOC sampling will extend for no more than three two-foot intervals below the lowest radionuclide sample or until the top of the water table (or other limiting condition) is encountered.

The single location from within the sump of Building 732 (CE44-030, see below) will also be sampled for metals in two intervals as an opportunity to further characterize the IA at depth. Metals are not believed to be PCOCs for IHSS Group 700-10.

3.0 SAMPLING

The proposed sampling and analysis specifications for IHSS Group 700-10 are listed, by sample location, in Table 2 and summarized in Table 3. The proposed sampling locations are shown in Figure 2. Biased subsurface soil samples will be collected from IHSS Group 700-10 at five locations. Four locations (CE44-027 through CE44-29, and CE44-031) were positioned outside the perimeter of the building downgradient with respect to groundwater and the interior slope of the floor of Building 732. Exterior sampling locations will evaluate whether contaminants migrated between the walls and floor of Building 732 to exterior soils. The single location inside Building 732 (CE44-030) will evaluate potential contamination directly under the slab.

Table 3
IHSS Group 700-10 Sampling Analysis Summary

Category	Total
Number of Sampling Locations	5
Number of Samples	25
Number of Radionuclide Analyses	10
Number of Metal Analyses	2
Number of VOC Analyses (maximum)	25

Sampling depth intervals for the five locations are given in Table 2. After characterization starts, the number and type of samples may change based on field conditions and/or sampling results. Changes to sampling specifications will be considered in consultation with the regulatory agencies.

Three types of sampling strategies are used to determine sampling locations: statistical, biased, and geostatistical. Statistical grids have computer-generated random start points and orientations. The standard statistical grid size (i.e., the length between grid points) is 11 meters (36 feet). Because the grid spacing is greater than the dimensions of Building

Table 2
Sampling Specifications for IHSS Group 700-10

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval (ft.)	Analyte	Onsite Laboratory Method	Offsite Laboratory Method	Comments
700-10	PAC 700-1101, Building 732	CE44-027	2083613.736	750315.440	Subsurface Soil	12.5-14.5’	Radionuclides	HPGe	Alpha Spec	Interval measured from current ground surface
		CE44-027	2083613.736	750315.440	Subsurface Soil	12.5-14.5’	VOCs	8260	8260	Interval measured from current ground surface
		CE44-027	2083613.723	750315.440	Subsurface Soil	14.5-16.5'	Radionuclides	HPGe	Alpha Spec	Interval measured from current ground surface
		CE44-027	2083613.723	750315.440	Subsurface Soil	14.5-16.5'	VOCs	8260	8260	Interval measured from current ground surface
		CE44-027	2083613.723	750315.440	Subsurface Soil	16.5-18.5'	VOCs	8260	8260	As above, sample only if above water table
		CE44-027	2083613.723	750315.440	Subsurface Soil	18.5-20.5'	VOCs	8260	8260	As above, sample only if above water table
		CE44-027	2083613.723	750315.440	Subsurface Soil	20.5-22.5'	VOCs	8260	8260	As above, sample only if above water table
		CE44-028	2083613.823	750306.196	Subsurface Soil	12.5-14.5’	Radionuclides	HPGe	Alpha Spec	Interval measured from current ground surface
		CE44-028	2083613.823	750306.196	Subsurface Soil	12.5-14.5’	VOCs	8260	8260	Interval measured from current ground surface
		CE44-028	2083613.823	750306.196	Subsurface Soil	14.5-16.5'	Radionuclides	HPGe	Alpha Spec	Interval measured from current ground surface
		CE44-028	2083613.823	750306.196	Subsurface Soil	14.5-16.5'	VOCs	8260	8260	Interval measured from current ground surface

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval (ft.)	Analyte	Onsite Laboratory Method	Offsite Laboratory Method	Comments
700-10	PAC 700-1101, Building 732	CE44-028	2083613.823	750306.196	Subsurface Soil	16.5-18.5'	VOCs	8260	8260	As above, sample only if above water table
		CE44-028	2083613.823	750306.196	Subsurface Soil	18.5-20.5'	VOCs	8260	8260	As above, sample only if above water table
		CE44-028	2083613.823	750306.196	Subsurface Soil	20.5-22.5'	VOCs	8260	8260	As above, sample only if above water table
		CE44-029	2083613.649	750296.300	Subsurface Soil	12.5-14.5’	Radionuclides	HPGe	Alpha Spec	Interval measured from current ground surface
		CE44-029	2083613.649	750296.300	Subsurface Soil	12.5-14.5’	VOCs	8260	8260	Interval measured from current ground surface
		CE44-029	2083613.649	750296.300	Subsurface Soil	14.5-16.5'	Radionuclides	HPGe	Alpha Spec	Interval measured from current ground surface
		CE44-029	2083613.649	750296.300	Subsurface Soil	14.5-16.5'	VOCs	8260	8260	Interval measured from current ground surface
		CE44-029	2083613.649	750296.300	Subsurface Soil	16.5-18.5'	VOCs	8260	8260	As above, sample only if above water table
		CE44-029	2083613.649	750296.300	Subsurface Soil	18.5-20.5’	VOCs	8260	8260	As above, sample only if above water table
		CE44-029	2083613.649	750296.300	Subsurface Soil	20.5-2.5’	VOCs	8260	8260	As above, sample only if above water table
		CE44-030	2083610.785	750296.864	Subsurface Soil	0.0-0.5’	Radionuclides	HPGe	Alpha Spec	Interval starts below slab and fill*
		CE44-030	2083610.785	750296.864	Subsurface Soil	0.0-0.5’	Metals	6200	6010	Interval starts below slab and fill*

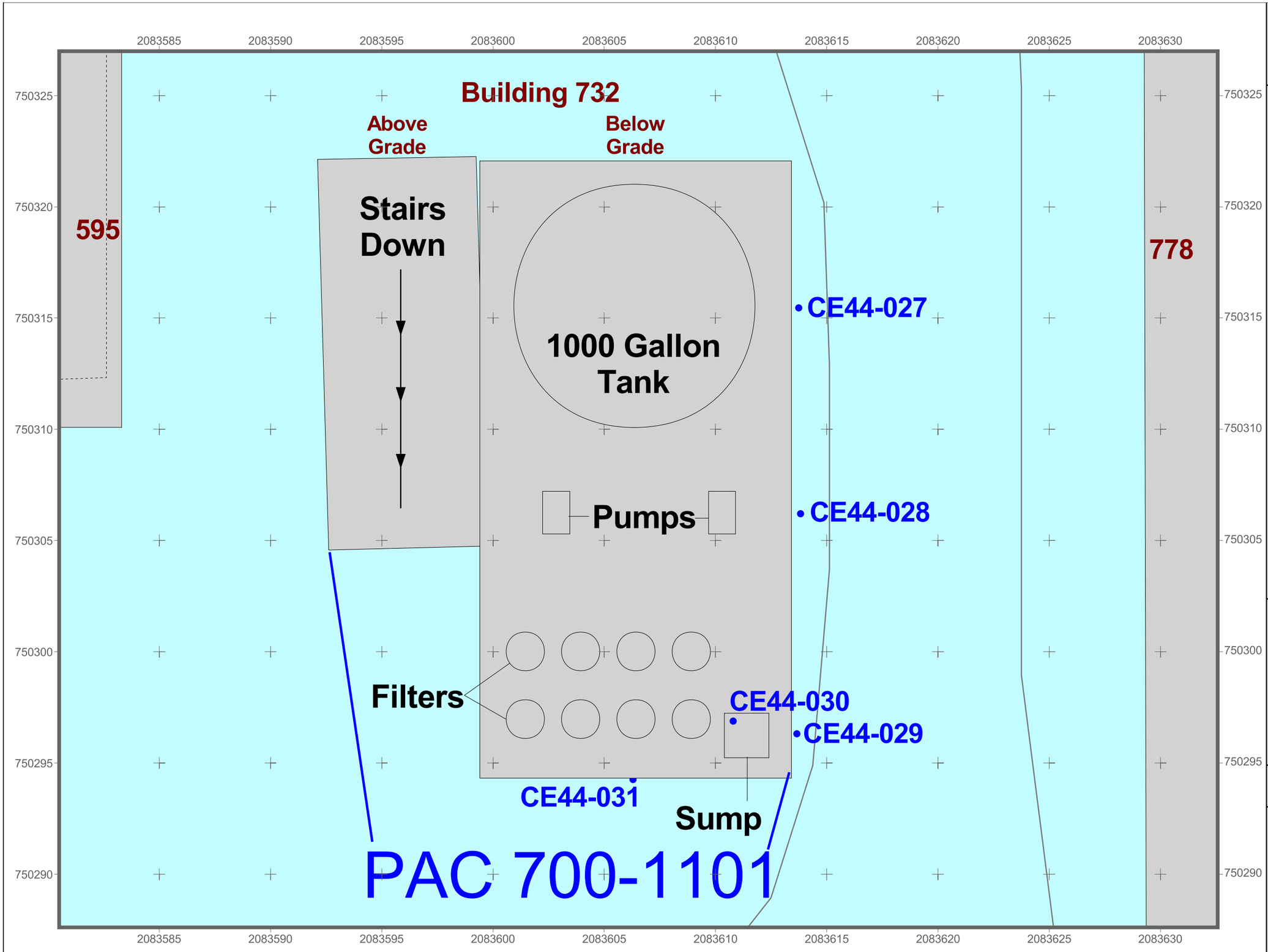
IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval (ft.)	Analyte	Onsite Laboratory Method	Offsite Laboratory Method	Comments
		CE44-030	2083610.785	750296.864	Subsurface Soil	0.0-0.5’	VOCs	8260	8260	Interval starts below slab and fill*
700-10	PAC 700-1101, Building 732	CE44-030	2083610.785	750296.864	Subsurface Soil	0.5-2.5’	Radionuclides	HPGe	Alpha Spec	Interval starts below slab and fill*
		CE44-030	2083610.785	750296.864	Subsurface Soil	0.5-2.5’	Metals	6200	6010	Interval starts below slab and fill*
		CE44-030	2083610.785	750296.864	Subsurface Soil	0.5-2.5’	VOCs	8260	8260	Interval starts below slab and fill*
		CE44-030	2083610.785	750296.864	Subsurface Soil	2.5-4.5'	VOCs	8260	8260	As above, sample only if above water table
		CE44-030	2083610.785	750296.864	Subsurface Soil	4.5-6.5'	VOCs	8260	8260	As above, sample only if above water table
		CE44-030	2083610.785	750296.864	Subsurface Soil	6.5-8.5'	VOCs	8260	8260	As above, sample only if above water table
		CE44-031	2083606.292	750294.238	Subsurface Soil	12.5-14.5’	Radionuclides	HPGe	Alpha Spec	Interval measured from current ground surface
		CE44-031	2083606.292	750294.238	Subsurface Soil	12.5-14.5’	VOCs	8260	8260	Interval measured from current ground surface
		CE44-031	2083606.292	750294.238	Subsurface Soil	14.5-16.5'	Radionuclides	HPGe	Alpha Spec	Interval measured from current ground surface
		CE44-031	2083606.292	750294.238	Subsurface Soil	14.5-16.5'	VOCs	8260	8260	Interval measured from current ground surface
		CE44-031	2083606.292	750294.238	Subsurface Soil	16.5-18.5'	VOCs	8260	8260	As above, sample only if above water table

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval (ft.)	Analyte	Onsite Laboratory Method	Offsite Laboratory Method	Comments
		CE44-031	2083606.292	750294.238	Subsurface Soil	18.5-20.5'	VOCs	8260	8260	As above, sample only if above water table
		CE44-031	2083606.292	750294.238	Subsurface Soil	20.5-22.5'	VOCs	8260	8260	As above, sample only if above water table

*The bottom of the Building 732 slab is 12.7 feet below present ground surface. Below the slab is a 1-foot thick interval of coarse gravel fill. Undisturbed soil should be encountered at 13.7 feet below current ground surface.

Figure 2

IHSS Group 700-10
PAC 700-1101
Proposed Sampling Locations



KEY

- Proposed Biased Sample Locations (Scenario #990)
- IHSS 000-162
- Demolished building
- Standing building
- Paved road
- Fence

N
W E
S

5 0 5 10 Feet

Scale = 1:50

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared for: KAISER•HILL COMPANY

Prepared by: RADMS

Date: 1/7/04

File: W://Projects/Fy2004/700-10/IHSS Group 700-10.apr

732 at IHSS Group 700-10, statistical sampling will not be used. Geostatistical samples supplement the statistical grid locations but will not be used at IHSS Group 700-10.

Samples will be analyzed in accordance with the IASAP (DOE 2001). The onsite laboratory will be used to analyze for radionuclides.

4.0 REFERENCES

DOE, 1992-2003, Historical Release Reports for the Rocky Flats Plant, Golden, Colorado.

DOE, 2000, Industrial Area Data Summary Report, Rocky Flats Environmental Technology Site, Golden, Colorado, September.

DOE, 2001, Industrial Area Sampling and Analysis Plan, Rocky Flats Environmental Technology Site, Golden, Colorado, June.

DOE, 2003a, Waste Stream and Residue Identification and Characterization – Building 732, Version 7.0, January.

DOE, 2003b, Environmental Restoration RFCA Standard Operating Protocol for Routine Soil Remediation, FY04 Notification #04-07, IHSS Group 700-10, PAC 700-1101, November.